

REMARKS

Applicant appreciates the Examiner's thorough consideration provided the present application. Claims 1, 7, 9, 11, 12, 15, 16, 23, 24, 27, 29, 36, 37, 44 and 47-51 are now present in the application. Claims 1 and 29 have been amended. Claims 25, 40 and 45 have been cancelled. Claims 1 and 29 are independent. Reconsideration of this application, as amended, is respectfully requested.

Claim Rejections Under 35 U.S.C. §112

Claim 25 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. This rejection is respectfully traversed.

Without conceding to the propriety of the Examiner's rejection, but merely to timely advance the prosecution of the application, claim 25 has been cancelled. Accordingly, this rejection has been obviated and/or rendered moot. Reconsideration and withdrawal of the rejection under 35 U.S.C. § 112, second paragraph, are therefore respectfully requested.

Claim Rejections Under 35 U.S.C. § 102 & 103

Claims 1, 7, 9, 11, 12, 23-25, 27, 29, 36, 37, 40, 45 and 47-49 stand rejected under 35 U.S.C. § 103(a) as being anticipated by or, in the alternative, unpatentable over Malin, U.S. Patent No. 5,377,002. Claims 15, 16, 50 and 51 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Malin in view of Worster, U.S. Patent No. 5,479,252. Claim 44 stands

rejected under 35 U.S.C. § 103(a) as being unpatentable over Malin in view of Raz, U.S. Patent No. 6,049,421

In light of the foregoing amendments, Applicant respectfully submits that these rejections have been obviated and/or rendered moot. As the Examiner will note, independent claims 1 and 29 have been amended.

Independent claim 1 now recites “[a]n apparatus for identifying a position of marked objects having unknown positions and detecting a property of the marked objects contained in a specimen, wherein the marked objects are marked with a fluorescent stain, the apparatus comprising a frame, a member positioned on the frame and having a surface that is adapted to receive and hold the specimen, at least a first light source for emitting at least a first light beam towards the specimen held by the member, wherein the first light beam is adapted to provide a light spot having a diameter between 20-150 μ m on the specimen, at least a detector for detecting a light emitted from the marked objects upon interaction with the first light beam, the first light source and the detector being arranged so that a part of a light beam path from the first light source to the specimen is co-axial with a part of the light emitted from the marked objects, at least one beam-splitter being arranged to reflect the first light beam towards the specimen and filter light emitted from the marked objects, scanning means for scanning the entire surface of the member in relation to the detector along a non-linear curve, wherein the scanning means comprises means for rotating the member and means for displacing the member along a radius of the rotation of the member, so as to identify the position of the marked objects in the entire specimen and detect the property of the marked objects, the means for rotating and the means for displacing being directly connected to the member, the member being rotatable and displaceable

along a radius of the rotation of the member, scanning control means for controlling the scanning means for scanning the specimen along the non-linear curve, storage means for storing detector signals relating to the marked objects provided by the detector and corresponding position signals provided by the scanning control means, means for retrieving the position signals stored in the storage means, and a microscope for viewing images of the marked objects, wherein the scanning control means uses the retrieved position signals to place the microscope at the position of the marked objects to allow performing a detailed examination of the marked objects.”

Independent claim 29 now recites “[a] method of identifying a position of a fluorescently marked object having an unknown position and detecting a property of the object contained in a specimen and comprising the steps of: positioning the specimen on a member having a surface that is adapted to receive and hold the specimen, emitting at least a first light beam from a first light source towards the specimen held by the member, wherein the first light beam is adapted to provide a light spot having a diameter between 20-150 μ m on the specimen, and wherein the first light beam is reflected by a beam-splitter towards the specimen, scanning the entire surface of the member in relation to a detector along a non-linear curve by rotating the member holding the specimen and displacing the member along a radius of the rotation of the member, the member being rotatable and displaceable along a radius of the rotation of the member, arranging the light source and the detector, so that a part of a light beam path from the first light source to the specimen is co-axial with a part of a light emitted from the object, filtering through said beam-splitter light emitted from the object, detecting the light emitted from the object, thereby identifying the position of the object and detecting the property of the object during scanning of the entire specimen, storing detector signals relating to the object provided by the detector and

corresponding position signals provided by the scanning control means, retrieving the position signals stored in the storage means, placing a microscope at the position of the object using the retrieved the position signals to allow performing a detailed examination of the object, and optically inspecting the object by viewing an image of the object via the microscope by a user..”

Support for the amendments to claims 1 and 29 can be found on page 17, line 6-15 of the specification and in FIG. 1 as originally filed. Applicant respectfully submits that the above combinations of elements and steps as set forth in amended independent claims 1 and 29 are not disclosed nor suggested by the references relied on by the Examiner.

First of all, although the Examiner in several occasions of the outstanding Office Action mentioned the Reber reference cited in the previous Office Actions, Applicant believes what the Examiner intended to refer to is the Malin reference.

Malin discloses an apparatus for detecting surface defects by emitting the light towards the surface and examining light scattering back from the surface. However, no fluorescent light is emitted from the surface in Malin. Therefore, Malin cannot identify a position of a fluorescently marked object as recited in claims 1 and 29.

In addition, Malin in FIGs. 1 and 4a-c discloses that a deflector is arranged in the light beam from the light source to deflect light towards the surface. However, since the light emitted towards the surface and the light scattered back from the surface consist of exactly identical wavelengths, the light scattered back from the surface is likewise deflected by the deflector.

On the other hand, the beam-splitter arranged of the claimed invention reflects light from the light source and allows light emitted from the objects to pass the beam-splitter. Due to the fact that the light emitted from the objects has another wavelength than the light beam from the light source, the beam-splitter may function as a filter.

Unlike the claimed invention, Malin's apparatus cannot function if a beam-splitter is arranged to deflect light from the light source and filter light scattered from the surface, respectively, since no light would then reach the detector, in that light scattered from the surface would be deflected by the deflector. Therefore, Malin fails to teach "at least one beam-splitter being arranged to reflect the first light beam towards the specimen and filter light emitted from the marked objects" as recited in claim 1, and "the first light beam is reflected by a beam-splitter towards the specimen" and "filtering through said beam-splitter light emitted from the object" as recited in claim 29.

Applicant also respectfully submits that, by using a beam-splitter in the claimed invention, it is possible to attenuate any light components merely being reflected from the specimen, thereby increasing the signal-to-noise ratio (see page 17, lines 6-15). This feature is clearly absent from Malin and the other utilized references.

With regard to the Examiner's reliance on Worster and Raz, these references have only been relied on for their teachings related to some dependent claims. These references also fail to disclose the above combinations of elements and steps as set forth in amended independent claims 1 and 29. In particular, Worster relates to a laser imaging system for analyzing defects on semiconductor wafers, but fails to teach a system having a beam-splitter arranged to deflect light from the light source while at the same time being capable of filtering the light scattered from the surface as recited in claims 1 and 29. Raz relates to automated scanning of microscope slides, but fails to disclose any scanning of slides comprising fluorescently marked objects. Furthermore, Raz also fails to disclose a system comprising a beam-splitter capable of deflecting light from the light source and filtering light from the slide as recited in claims 1 and 29. Accordingly, these references fail to cure the deficiencies of Malin.

Accordingly, none of the references utilized by the Examiner individually or in combination teach or suggest the limitations of amended independent claims 1 and 29 or their dependent claims. Therefore, Applicant respectfully submits that claims 1 and 29 and their dependent claims clearly define over the teachings of the references relied on by the Examiner.

Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. §§ 102 and 103 are respectfully requested.

CONCLUSION

Since the remaining patents cited by the Examiner have not been utilized to reject the claims, but merely to show the state of the prior art, no further comments are necessary with respect thereto.

It is believed that a full and complete response has been made to the Office Action, and that as such, the Examiner is respectfully requested to send the application to Issue.

In the event there are any matters remaining in this application, the Examiner is invited to contact Joe McKinney Muncy, Registration No. 32,334 at (703) 205-8000 in the Washington, D.C. area to conduct an interview in an effort to expedite prosecution in connection with the present application.

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If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

By 

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